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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet **1** of **5**

Complete if Known

Application Number **10/067,956**
Filing Date **February 5, 2002**
First Named Inventor **Barber, Jack**
Group Art Unit **1635**
Examiner Name **Schmidt**
Attorney Docket Number **016556-002910US**



U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
KAL	A1	5,254,678		Haseloff et al.	10/19/93	
	A2	5,270,163		Gold et al.	12/14/93	
	A3	5,354,855		Cech et al.	10/11/94	
	A4	5,496,698		Draper et al.	03/05/96	
	A5	5,567,588		Gold et al.	10/22/96	
	A6	5,574,143		Haselhoff et al.	11/12/96	
	A7	5,574,967		Dent et al.	11/12/96	
	A8	5,580,967		Joyce	12/03/96	
	A9	5,595,877		Gold et al.	01/21/97	
	A10	5,610,054		Draper	03/11/97	
	A11	5,637,459		Burke et al.	06/10/97	
	A12	5,670,637		Gold et al.	09/23/97	
	A13	5,683,867		Biesecker et al.	11/04/97	
	A14	5,688,935		Stephens et al.	11/18/97	
	A15	5,696,249		Gold et al.	12/09/97	
	A16	5,705,337		Gold et al.	01/06/98	
	A17	5,712,375		Jensen et al.	01/27/98	
	A18	5,723,289		Eaton et al.	03/03/98	
	A19	5,723,592		Eaton et al.	03/03/98	
	A20	5,750,342		Stephens et al.	05/12/98	
	A21	5,763,177		Gold et al.	06/09/98	
	A22	5,763,566		Jensen et al.	06/09/98	
	A23	5,763,595		Gold et al.	06/09/98	
	A24	5,733,598		Burke et al.	06/30/98	
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	A27	5,817,785		Gold et al.	10/06/98	
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	A30	5,858,660		Eaton et al.	01/12/99	
	A31	5,861,254		Schneider et al.	01/19/99	
	A32	5,864,026		Jensen et al.	01/26/99	
	A33	5,874,218		Drolet et al.	02/23/99	

Examiner Signature **UM Schmidt** Date Considered **4/14/03**

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	Application Number	10/067,956		
	Filing Date	February 5, 2002		
	First Named Inventor	Barber, Jack		
	Group Art Unit	1635		
	Examiner Name	Schmidt		
Sheet	2	of	5	Attorney Docket Number
				016556-002910US

U.S. PATENT DOCUMENTS						
Examiner Initials *	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
KAL ↓	mmS	A34	6,043,077	Barber et al.	03/2000	
		A35	6,080,576	Zambrowicz et al.	06/2000	
		A36	5,639,595	Mirabelli et al.	06/1997	
		A37	6,183,959 B1	Thompson	02/2001	
		A38	5,252,465	Nigon et al.	10/1993	

FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)				
mmS ↓	B1	PCT	WO 92/01806	A	Drlica et al.	02/06/92		
	B2	PCT	WO 93/23569	A1	Draper et al.	11/25/93		
	B3	PCT	WO 94/26877	A1	Ho et al.	11/25/94		
	B4	PCT	WO 96/01314	A2	Lieber et al.	01/18/96		

Examiner Signature <i>Karen A. Lacombe</i> <i>MM Schmidt</i>	Date Considered 02-17-04 4/14/03
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			Group Art Unit	1635	
			Examiner Name	Schmidt	
			Attorney Docket Number	016556-002910US	
Sheet	3	of	5		

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS				
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		T ²
MMS	C1	Akhtar et al., "Molecular DIY with hairpins and hammerheads," <i>Nature Medicine</i> 1:300-302 (1995).		
	C2	Anderson et al., "Mutagenesis of the hairpin ribozyme," <i>Nucleic Acids Res.</i> 22:1096-1100 (1994).		
	C3	Bassi et al., "The ion-induced folding of the hammerhead ribozyme: Core sequence changes that perturb the folding into the active conformation," <i>RNA</i> 2:756 768 (1996).		
	C4	Bennett and Cullimore, "Selective cleavage of closely-related mRNAs by synthetic ribozymes," <i>Nucleic Acids Research</i> 20:831-837 (1992).		
	C5	Berzal-Herranz et al., "In vitro selection of active hairpin ribozymes by sequential RNA-catalyzed cleavage and ligation reactions," <i>Genes and Development</i> 6:129-134 (1992).		
	C6	Bratty et al., "The hammerhead RNA domain, a model ribozyme" <i>Biochim. et Biophys. Acta</i> 1216:345-359 (1993).		
	C7	Cameron and Jennings, "Specific gene suppression by engineered ribozymes in monkey cells," <i>Proc. Natl. Acad. Sci. USA</i> 86:9139-9143 (1989).		
	C8	Campbell and Cech, "Identification of ribozymes within a ribozyme library that efficiently cleave a long substrate RNA," <i>RNA</i> 1:598-609 (1995).		✓
	C9	Cech and Bass, "Biological catalysis by RNA," <i>Ann. Rev. Biochem</i> 55:599-629 (1986).		
	C10	Cech and Uhlenbeck, "Hammerhead nailed down," <i>Nature</i> 372:39-40 (1994).		
	C11	Chowrira et al., "Ionic requirements for RNA binding, cleavage, and ligation by the hairpin ribozyme," <i>Biochemistry</i> 32:1088-1095 (1993).		
	C12	De Young et al., "Catalytic properties of hairpin ribozymes derived from chicory yellow mottle virus and arabis mosaic virus satellite RNAs," <i>Biochemistry</i> 34:15785-15791 (1995).		
	C13	Dropulić et al., "Functional characterization of a U5 ribozyme: intracellular suppression of human immunodeficiency virus type 1 expression," <i>J. Virol.</i> 66:1432-1441 (1992).		
	C14	Feldstein et al., "Two sequences participating in the autolytic processing of satellite tobacco ringspot virus complementary RNA," <i>Gene</i> 82:53-61 (1989).		
	✓	C15	Gold et al., "Diversity of oligonucleotide functions," <i>Annu. Rev. Biochem.</i> , 64:763-797 (1995).	

Examiner Signature		Date Considered	02-17-04 4/14/05
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			Group Art Unit	1635	
			Examiner Name	Schmidt	
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MMS ↓	C16	Gold et al., "From oligonucleotide shapes to genomic SELEX: Novel biological regulatory loops," <i>Proc. Natl. Acad. Sci. USA</i> , 94:59-64 (1997).		
	C17	Gold et al., "SELEX and the evolution of genomes," <i>Current Opinion in Genetics & Development</i> , 7:848-851 (1997).		
	C18	Hampel et al., "Hairpin catalytic RNA model: evidence for helices and sequence requirement for substrate RNA," <i>Nucl. Acids Res.</i> 18:299-304 (1990).		
	C19	Kijima et al., "Therapeutic applications of ribozymes," <i>Pharmac. Ther.</i> 68:247-267 (1995).		
	C20	Leavitt et al., "Transfer of an anti-HIV-1 ribozyme gene into primary gene into primary human lymphocytes," <i>Human Gene Therapy</i> 5:1115-1120 (1994).		
	C21	Lieber and Strauss, "Selection of efficient cleavage sties in target RNAs by using a ribozyme expression library," <i>Mol. Cell. Biol.</i> 15:540-551 (1995).		
	C22	Macejak and Draper, "Design of quasi-random ribozyme expression vectors," <i>J. Cell. Biochem. Supplement</i> 17E, S206:202 (1993).		
	C23	Ojwang et al., "Inhibition of human immunodeficiency virus type 1 expression by a hairpin ribozyme," <i>Proc. Natl., Sci. USA</i> 89:10802-10806 (1992).		
	C24	Sioud et al., "Preformed ribozyme destroys tumour necrosis factor mRNA in human cells," <i>J. Mol. Biol.</i> 223:831-835 (1992).		
	C25	Thompson et al., "Ribozymes in gene therapy," <i>Nature Medicine</i> 1:277-278 (1995).		
	C26	Welch et al., "A potential therapeutic application of hairpin ribozymes: in vitro and in vivo studies of gene therapy for hepatitis C virus infection," <i>Gene Therapy</i> 3:994-1001 (1996).		
	C27	Yamada et al., "Intracellular immunization of human T cells with a hairpin ribozyme against human immunodeficiency virus type 1," <i>Gene Therapy</i> 1:38-45 (1994).		
	C28	Yamada et al., "Activity and cleavage site specificity of anti-HIV-1 ribozyme in human T cells," <i>Virology</i> 205:121-126 (1994).		
C29	Yu et al., "A hairpin ribozyme inhibits expression of diverse strains of human immunodeficiency virus type 1," <i>Proc Natl. Acad. Sci. USA</i> 90:6340-6344 (1993).			
↓	C30	Yu et al., "Intracellular immunization of human fetal cord blood stem/progenitor cells with a ribozyme against human immunodeficiency virus type 1," <i>Proc. Natl. Acad. Sci. USA</i> 92:699-703 (1995).		

<i>Karen A. Lacomine</i>		02-17-04	
Examiner Signature	<i>U. Schmidt</i>	Date Considered	4/14/03

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maus	C31	Yu et al., "In Vitro and in Vivo characterization of a second functional hairpin ribozyme against HIV-1," <i>Virology</i> 206:381-386 (1995).		
uus	C32	Tuschl, Thomas, et al., "Selection in vitro of novel ribozymes from a partially randomized U2 and U6 snRNA library, THE EMBO JOURNAL, Vol. 17, No. 9, pp. 2637-2650 (1998).		

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Examiner Signature	<div style="text-align: right; margin-bottom: 10px;"><i>Karen O. Laconiere</i></div> <i>U. Schmidt</i>	Date Considered	02-17-04 4/14/03
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